



2015 Fire NEI Workshop: 2011 Results and 2014 Improvements



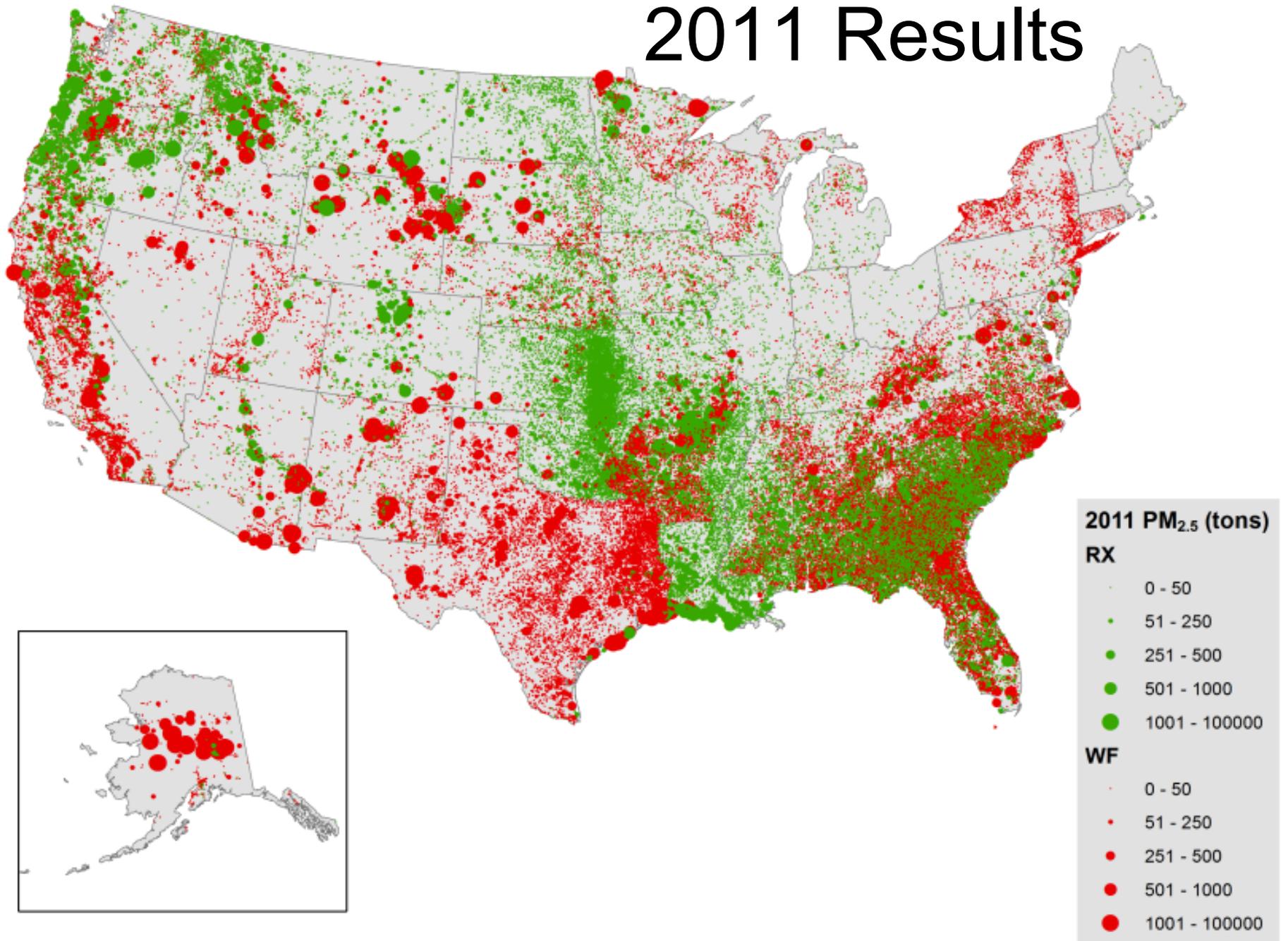
STi

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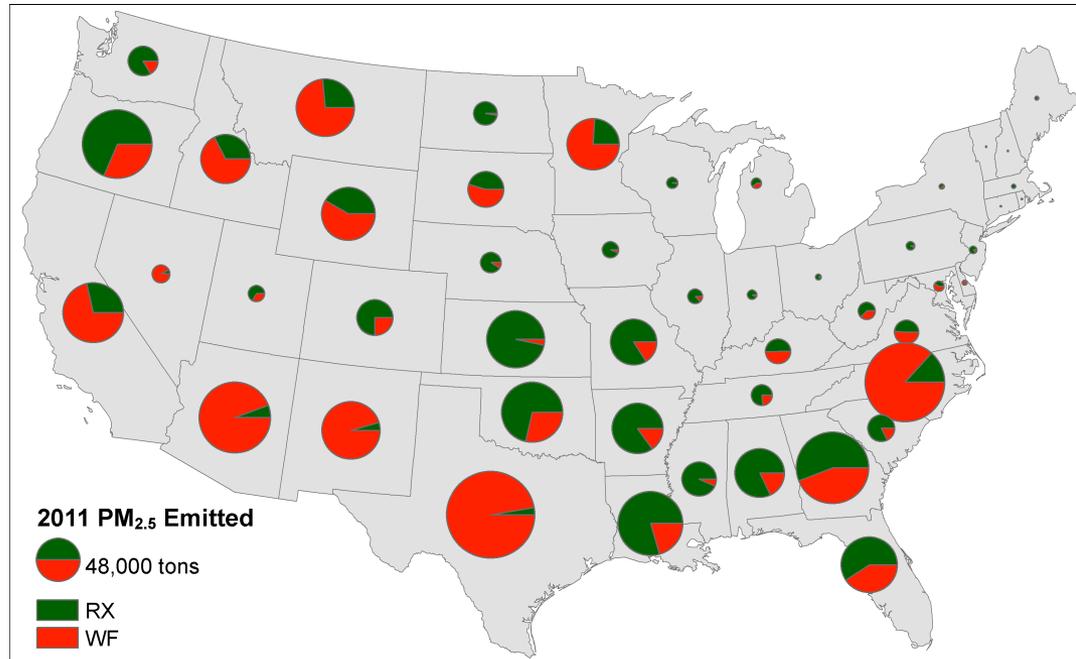
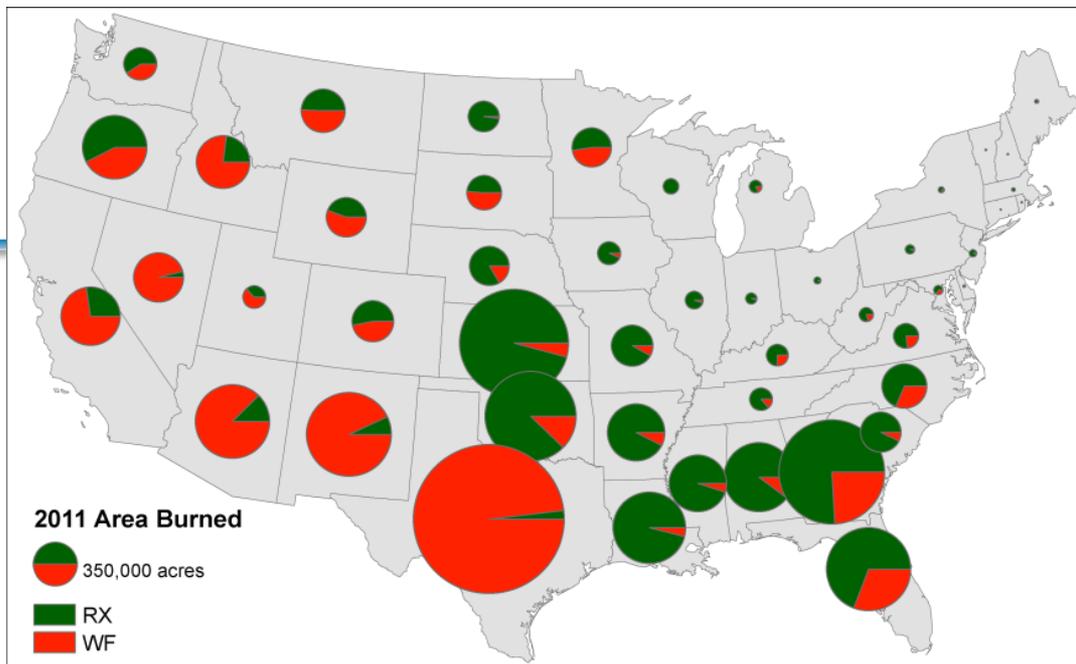
Presented to EPA's 2015
Emission Inventory Conference
San Diego, California
April 13, 2015

2011 Results



2011 Results (Overall)

- Large WF area in southwest, especially Texas
- Rx burns dominate area burned in southeast and central plains
- Many states show similar $PM_{2.5}$ emissions totals
- High $PM_{2.5}$ from peat fires (NC, MN)

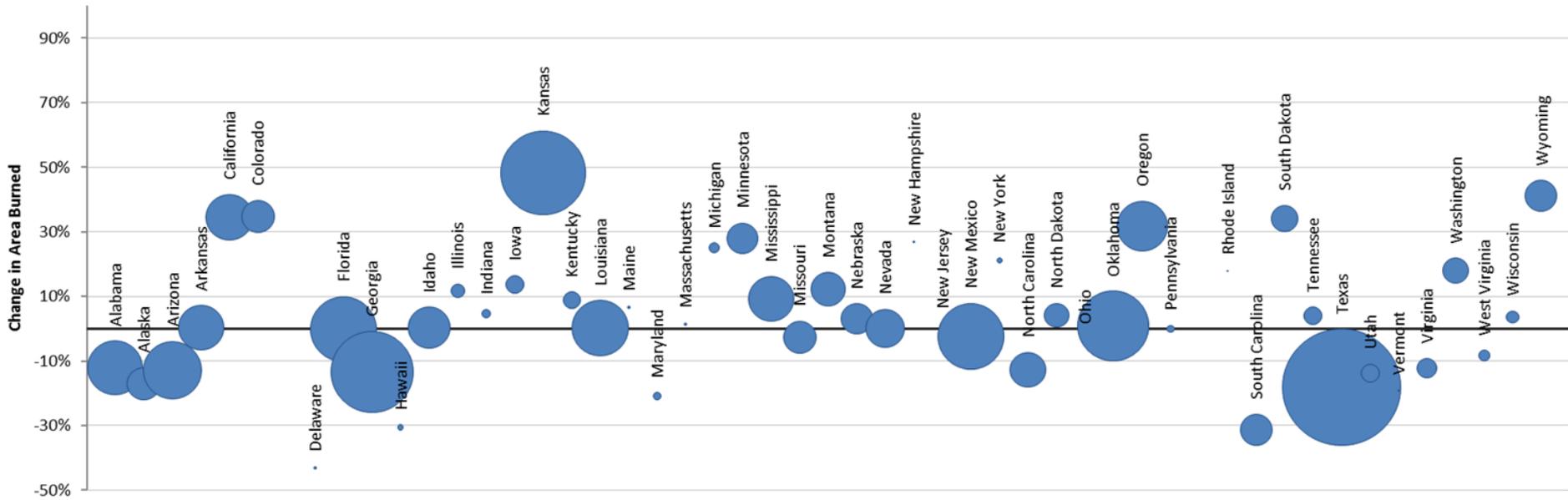


Comparison to 2011 Baseline with no Local Sources

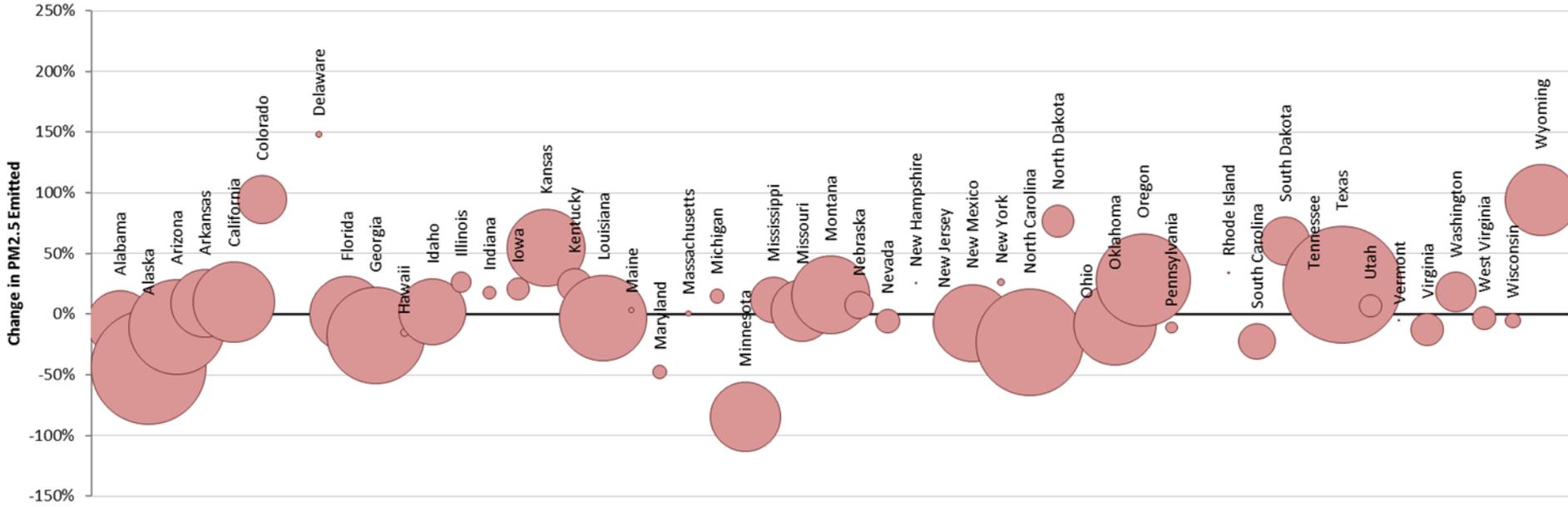
	Area Burned (acres)	PM _{2.5} Emitted (tons)
Baseline	23,440,000	2,179,000
Local data sets added	23,110,000	2,603,000

- Total national area burned is nearly identical
- PM_{2.5} increased by 19%
- The differences vary by state

Change in Area Burned

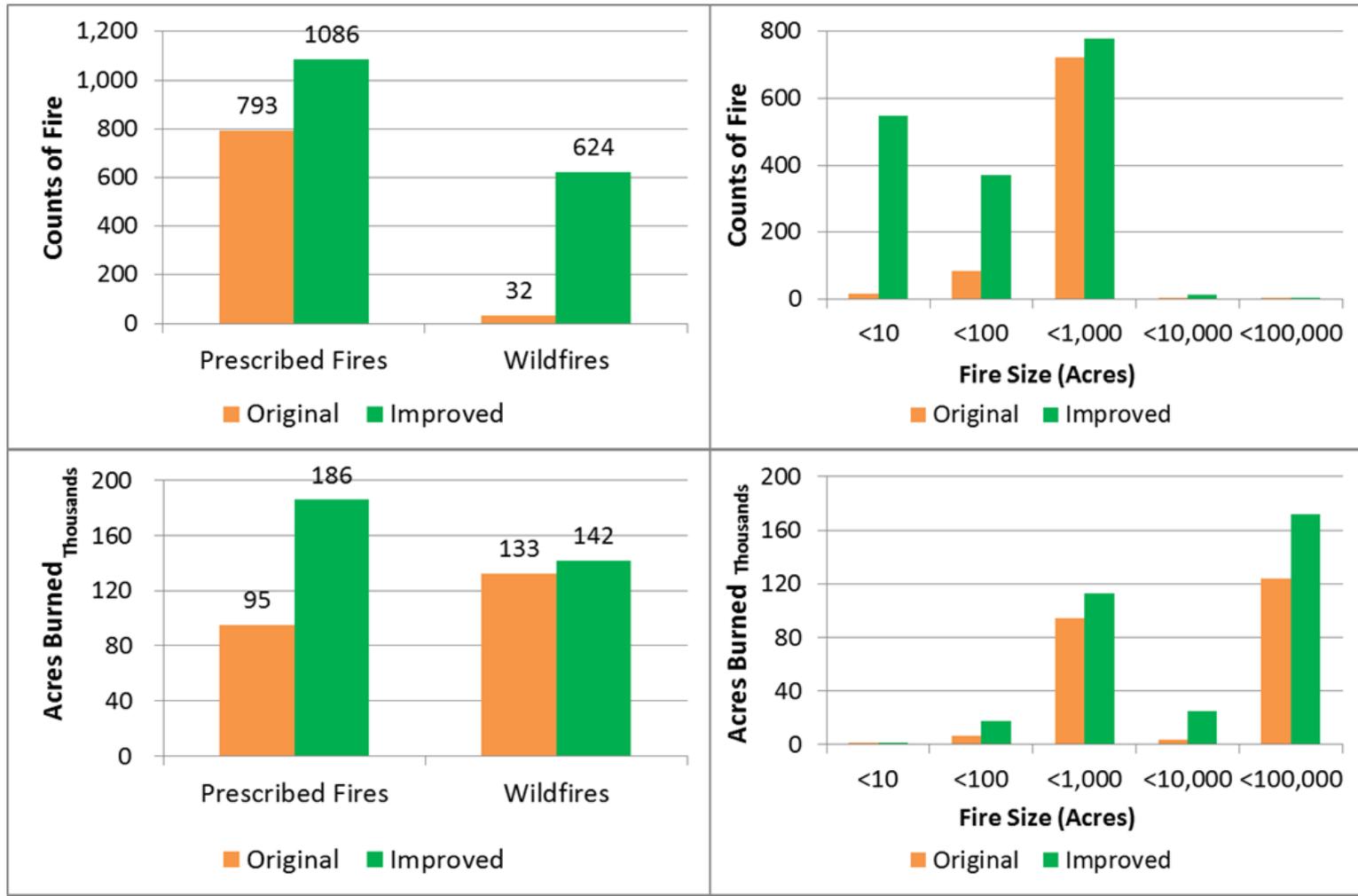


Change in PM_{2.5} Emitted



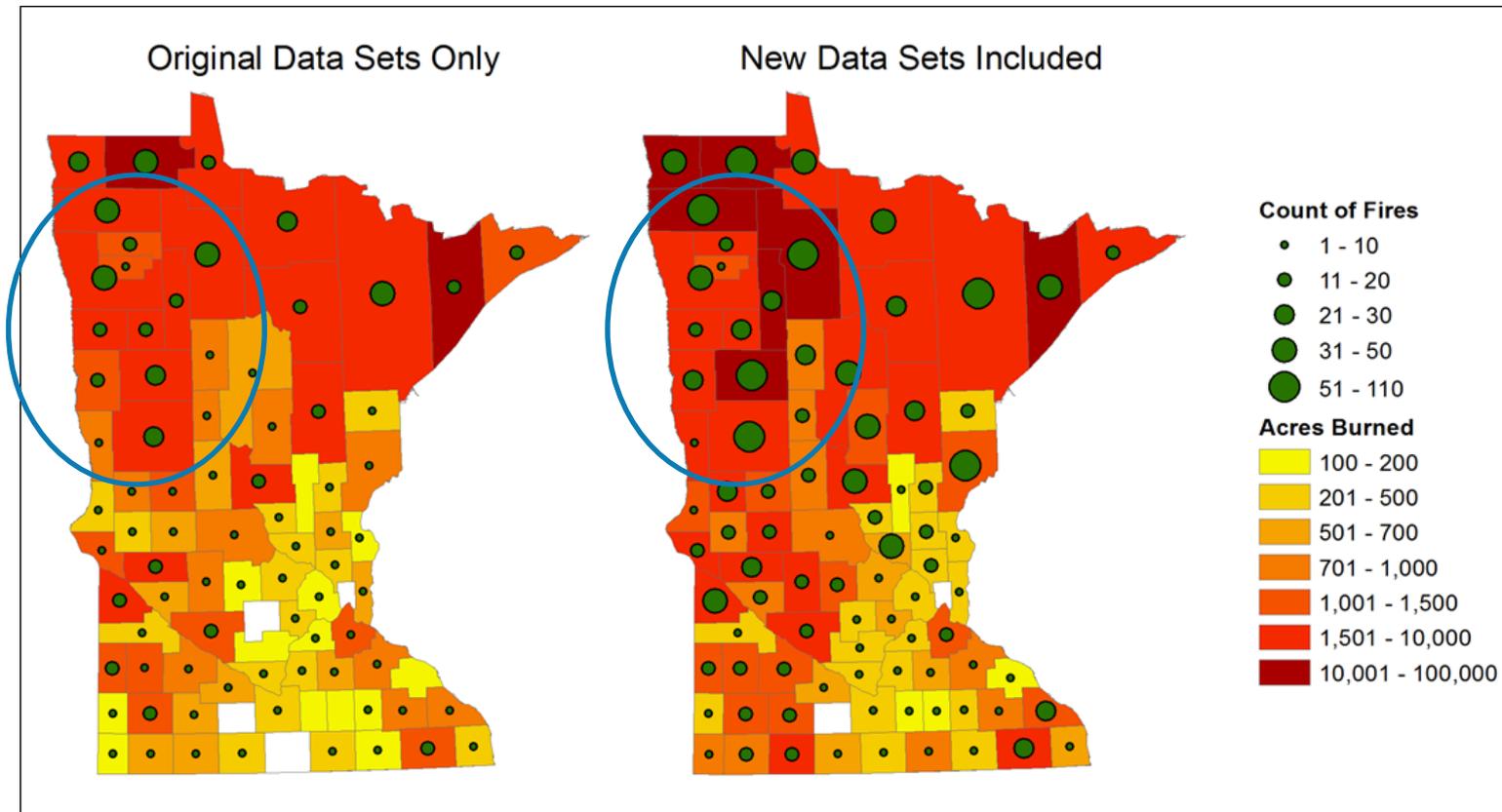
Example – Minnesota

12 data sets (3 original + 9 added)



Example – Minnesota

12 data sets (3 original + 9 added)



Issues to Improve for 2014

- State-provided complete data sets
- Agricultural burn classification
- Incorrect grouping of fires
- Emission factors
- Pile burning
- Individual fire issues

Do you have complete data?

- With information on fire types and land ownerships covered, we can use state-provided fire activity data exclusively, without the need to reconcile with satellites.
- Providing this metadata will allow us to improve the inventory.

2014 NEI Wildland Fire Inventory Database Questionnaire					
For each row, please indicate whether that fire type, land type, or land ownership is included in the database ALWAYS, SOMETIMES, or NEVER. For SOMETIMES, please explain in the comments.					
Please indicate the expected coverage - the % of all fires that should be in the database that actually are.					
FIRE TYPES AND SIZES OF FIRES INCLUDED					
Type:	Should be included:	Expected coverage:	Min size (acres or piles) for inclusion if any:	Comments if any:	
F1 WILDFIRES					
F2 PRESCRIBED BURNS (BROADCAST BURNS)					
F3 PRESCRIBED BURNS (PILE BURNS)					
F4 RANGELAND BURNING					
F5 AGRICULTURAL BURNING					
PRIMARY AGENCIES OR ACTORS INCLUDED:					
Type:	Should be included:	Expected coverage:	Comments if any:		
A1 State Forestry Agencies					
A2 State Department of Transportation					
A3 State Wildland Firefighting					
A4 State Agencies (all other)					
A5 County / Local Governments					
A6 Tribal Governments					
A7 Military					
A8 Federal (non-Military)					
A9 Private Landowners (Forestry Companies)					
A10 Private Landowners (All Others)					
A11 Other. Specify in comments as needed.					
LAND OWNERSHIPS INCLUDED					
Ownership:	Should be included:	Expected coverage:	Comments if any:		
L1 State Lands					
L2 County / Local Lands					
L3 Tribal Lands					
L4 Military Bases					
L5 Federal Lands (non-military)					
L6 Private Lands (Forestry Companies)					
L7 Private Lands (All Others)					

Agricultural Burn Classification

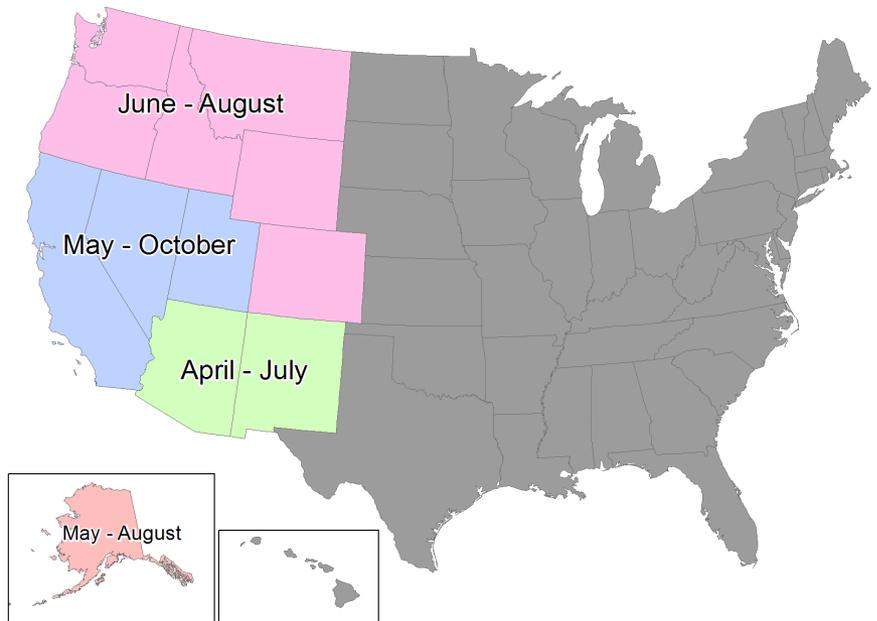
- For 2011, we used the USGS National Land Cover Dataset to identify croplands and tag fires as agricultural.
- For 2014, we will use the USDA Cropland Data Layer, which is updated annually and already available for 2014.
- We will work with EPA to ensure no overlap or gap between the set of satellite fires used in the wildland fire NEI and the agricultural burning NEI.

Incorrect Grouping of Fires

- In some cases, SmartFire would reconcile a small fire early in the year with a large fire later in the year.
 - No effect on total emissions
 - Impacts daily emissions
 - Can create incorrect start/end dates for large, named fires
- This will be fixed by tightening reconciliation parameters

Fire Type Classification

- In the absence of other information, currently rely on a gross climatology of the state WF season
- Do you have better info for your state for 2014?



Shown months are wildfire season. Satellite only fires falling within these locations/months are classified as WF. All others are classified as Rx.

Emission Factors

Pile Burns

- At present, pile burns are treated as other prescribed burns
- To model pile burns properly, we need more data
 - At a minimum, number of piles and their approximate size

Individual Fire Issues

- With 225,000 records coming from dozens of sources, there are bound to be issues.
- We apply both automated and manual QC review, but focused primarily on the largest fires.
- We need your help.
- Current plan is for draft NEI to get to states in September and allow 4-6 weeks for review.

Reviewing Data



alabama_2011-usa_version_1.kmz